

The FHWA Sustainable Pavements Program

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U.S. Department of Transportation
Federal Highway Administration

FHWA Sustainable Pavements Program Goals

- Support the US DOT goals for liveability and sustainable transportation.
- Increase the body of knowledge regarding “sustainability” aspects of asphalt and concrete materials in pavement design, construction, and maintenance.
- Increase the use of “sustainable” technologies and practices in pavement design, construction, and maintenance.



Current Program Framework

- 1) Establishment and Coordination of a Sustainable Pavements Technical Working Group (TWG)
- 2) Development of Reference Documents on Sustainable Pavements and Materials
- 3) Evaluation and Assessment of Existing Tools
- 4) Evaluation and Assessment of Sustainable Techniques
- 5) Technology Transfer and Deployment



Subject to funding availability

Current Program Framework

- 1) **Establishment and Coordination of a Sustainable Pavements Technical Working Group (TWG)**
- 2) Development of Reference Documents on Sustainable Pavements and Materials
- 3) Evaluation and Assessment of Existing Tools
- 4) Evaluation and Assessment of Sustainable Techniques
- 5) Technology Transfer and Deployment

1) Sustainable Pavements Technical Working Group (SP TWG)

- TWG is composed of stakeholders in State DOT's, academia, industry, and other government agencies.
 - 20 members and approximately 100+ friends.
- Goal is for FHWA to gather feedback on the technical aspects of the Program.



Members and Friends of the SP TWG

- Agencies: DE DOT, WA DOT, Caltrans, NY DOT, LA DOT, City of Chicago, Ministry of Ontario
- Academia: Texas A&M, University of Arkansas, Michigan Tech, MIT, ISU-CP Tech Center, NCAT
- Industry: AI, NAPA, PCA, ACPA, Vulcan Materials, Koss, Construction, Heritage Research Group
- Friends: Broad representation from: Agencies, Academia, and Industry, and other interested individuals

Vision for the SP TWG

- Provide feedback and input to FHWA on aspects of sustainability and how it relates to pavements and materials.
- Review documents and deliverables.
- Formation of task groups focused on specific discussion topics.



Current Program Framework

- 1) Establishment and Coordination of a Sustainable Pavements Technical Working Group (TWG)
- 2) **Development of Guidelines for a Sustainable Pavements Program**
- 3) Evaluation and Assessment of Existing Tools
- 4) Evaluation and Assessment of Sustainable Techniques
- 5) Technology Transfer and Deployment

2) Development of Reference Documents

- Develop guidelines for the design and construction of sustainable pavements utilizing concrete materials.
- Develop guidelines for the design and construction of sustainable pavements utilizing asphalt materials.



Development of Reference Documents

1. Introduction
2. Concepts of Pavement Sustainability
3. Sustainable Materials for Paving
4. Design of Sustainable Pavements
5. Construction of Sustainable Pavements
6. Use Phase Considerations
7. Maintenance/Preservation /Rehabilitation Practices
8. End of Life for Sustainable Pavements
9. Sustainable Pavements in Liveable Communities
10. Assessing Pavement Sustainability
11. Summary and Future Needs

Estimated Completion in 2013

Current Program Framework

- 1) Establishment and Coordination of a Sustainable Pavements Technical Working Group (TWG)
- 2) Development of Reference Documents on Sustainable Pavements and Materials
- 3) **Evaluation and Assessment of Existing Tools**
- 4) Evaluation and Assessment of Sustainable Techniques
- 5) Technology Transfer and Deployment

3) Evaluation and Assessment of Existing Tools



- Assessment of existing tools such as:
 - Life Cycle Inventory (LCI)
 - Life Cycle Analysis (LCA)
 - Rating Systems
- What are the limitations, boundaries and how can these tools be used in a practical manner?
- Current thinking is to document a framework for LCA

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- 3) Evaluation and Assessment of Existing Tools
- 4) **Evaluation and Assessment of Sustainable Techniques**
- 5) Technology Transfer and Deployment

4) Evaluation and Assessment of Sustainable Techniques- Materials

- Physical properties of materials
- Performance of materials or techniques
- Guidelines for use and specifications
- Life cycle cost



Evaluation and Assessment of Sustainable Techniques- Design and Construction Practices



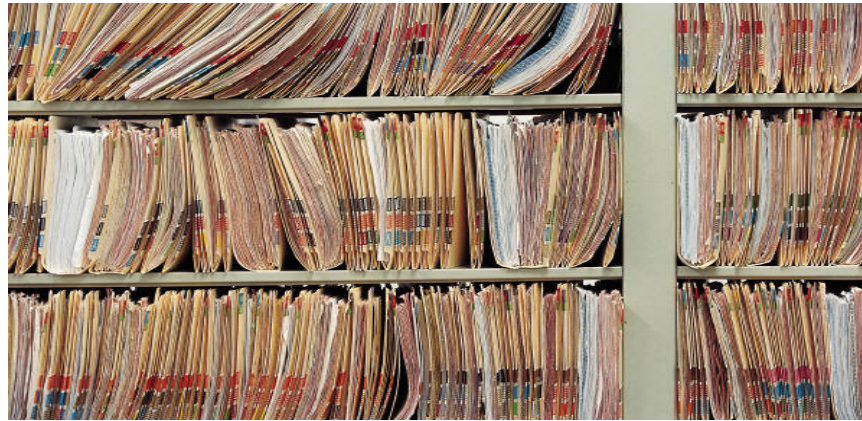
- Design guidance
- Construction considerations
- Impacts to other processes or practices
- Performance

Current Program Framework

- 1) Establishment and Coordination of a Sustainable Pavements Technical Working Group (TWG)
- 2) Development of Reference Documents on Sustainable Pavements and Materials Program
- 3) Evaluation and Assessment of Existing Tools
- 4) Evaluation and Assessment of Sustainable Techniques
- 5) **Technology Transfer and Deployment**

5) Technology Transfer

- Move the information from paper to practice.



- Provide tools to stakeholders to enhance the sustainability of our pavement systems.

Thank you

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ASR Workshops (6 *face-to-face*) & Webinars for all States

1-Day Agenda

Session 1 - Introduction and Workshop Objectives

Session 2 - Fundamentals of Alkali-Aggregate Reaction

Session 3 - Symptoms of AAR

Session 4 - AAR Test Methods

Session 5 - Prevention of ASR

Session 6 - AAR Specifications

Session 7 - Diagnosis and Prognosis of AAR

Session 8 - Repair Methods